

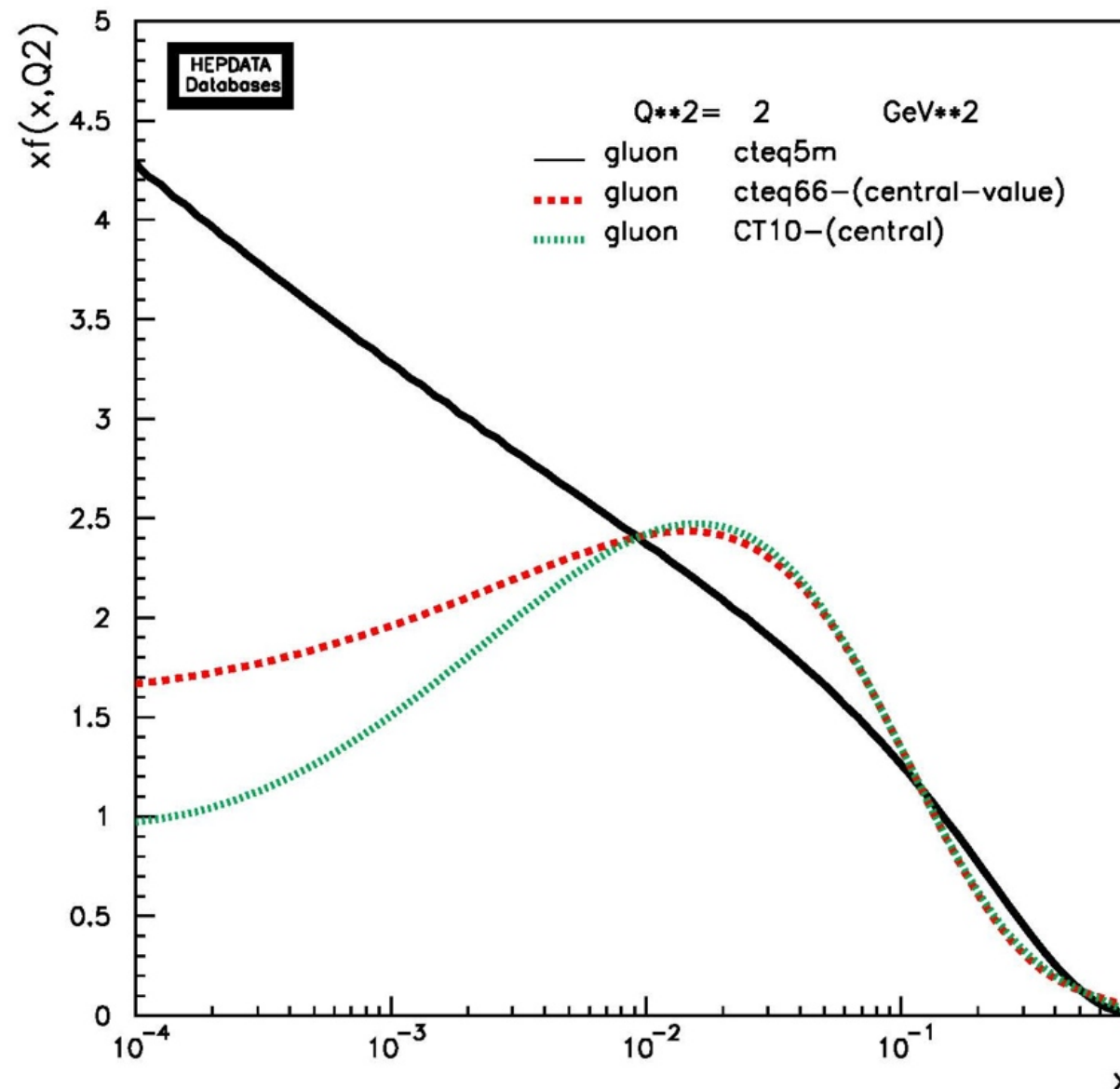
What to show in the
white paper - F_L , F_2

What do we do with F_2 , F_L ?

- Initially, it was thought that F_L was a golden measurement in e+A collisions and would discriminate between saturation and non-saturation effects
- Then came the model predictions....
- Many model predictions were previously shown from:
 - ➔ Leading-twist shadowing
 - FGS'10 - Frankfurt, Guzey, Strikman
 - ➔ Saturation
 - IPSat/bCGC - Raju, Lappi, Henri
 - rcBK - Albacete, Paloma

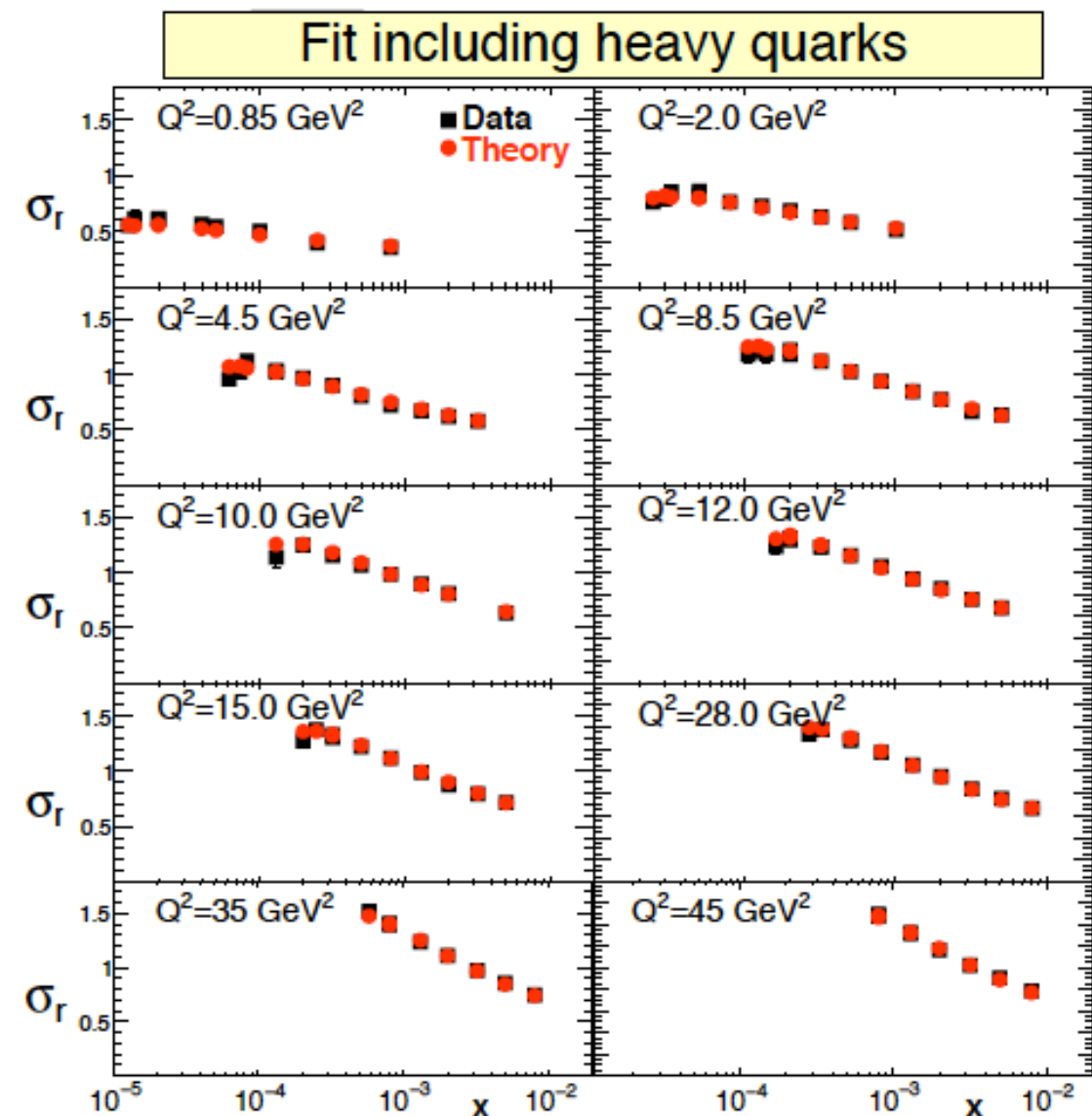
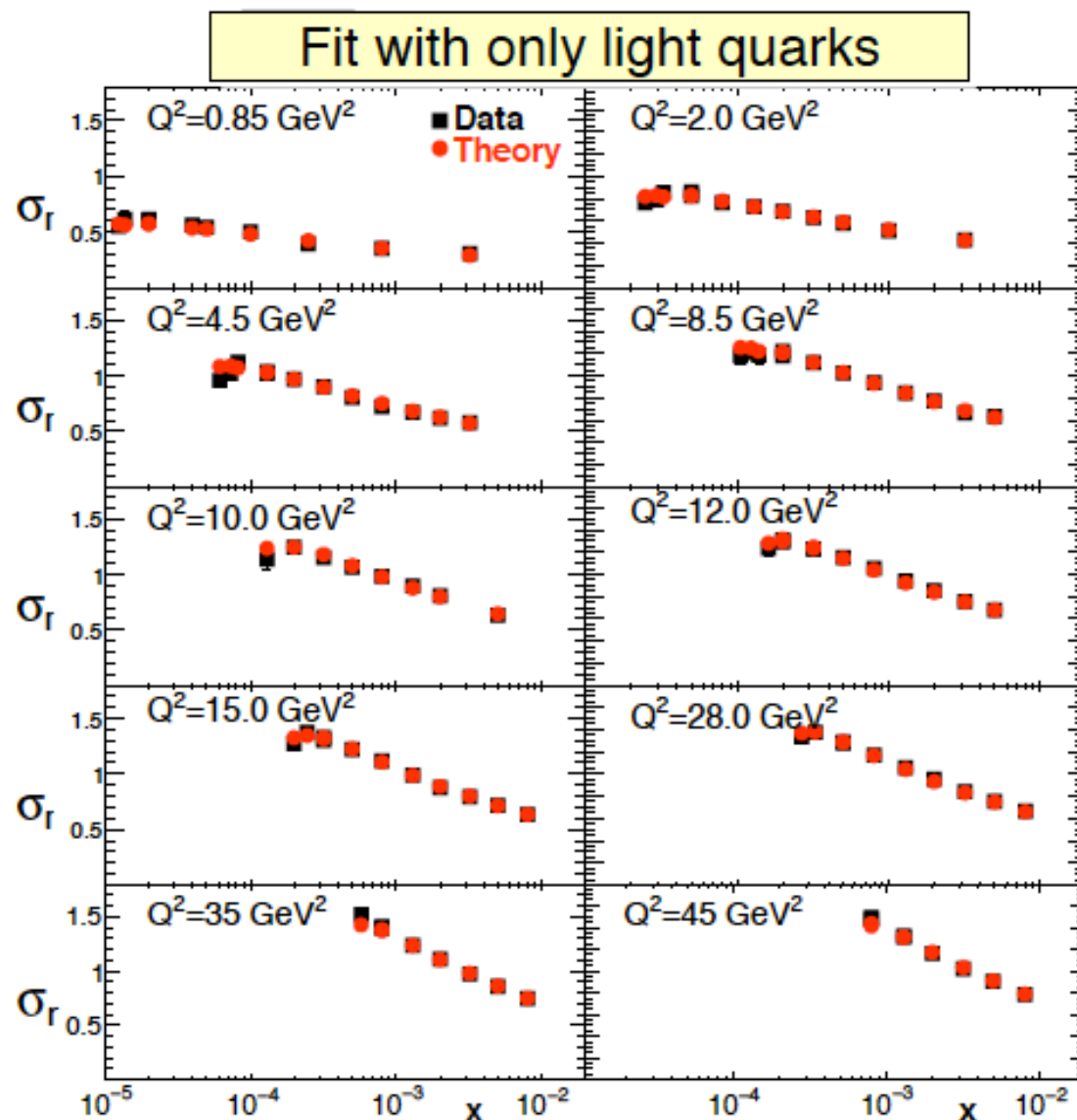
Leading-Twist Shadowing (FGS)

- Model is not a saturation model but creates saturation-like effects by hand.
- Does not reproduce the proton F_2 and F_L data
 - Uses decade-old CTEQ PDFs?



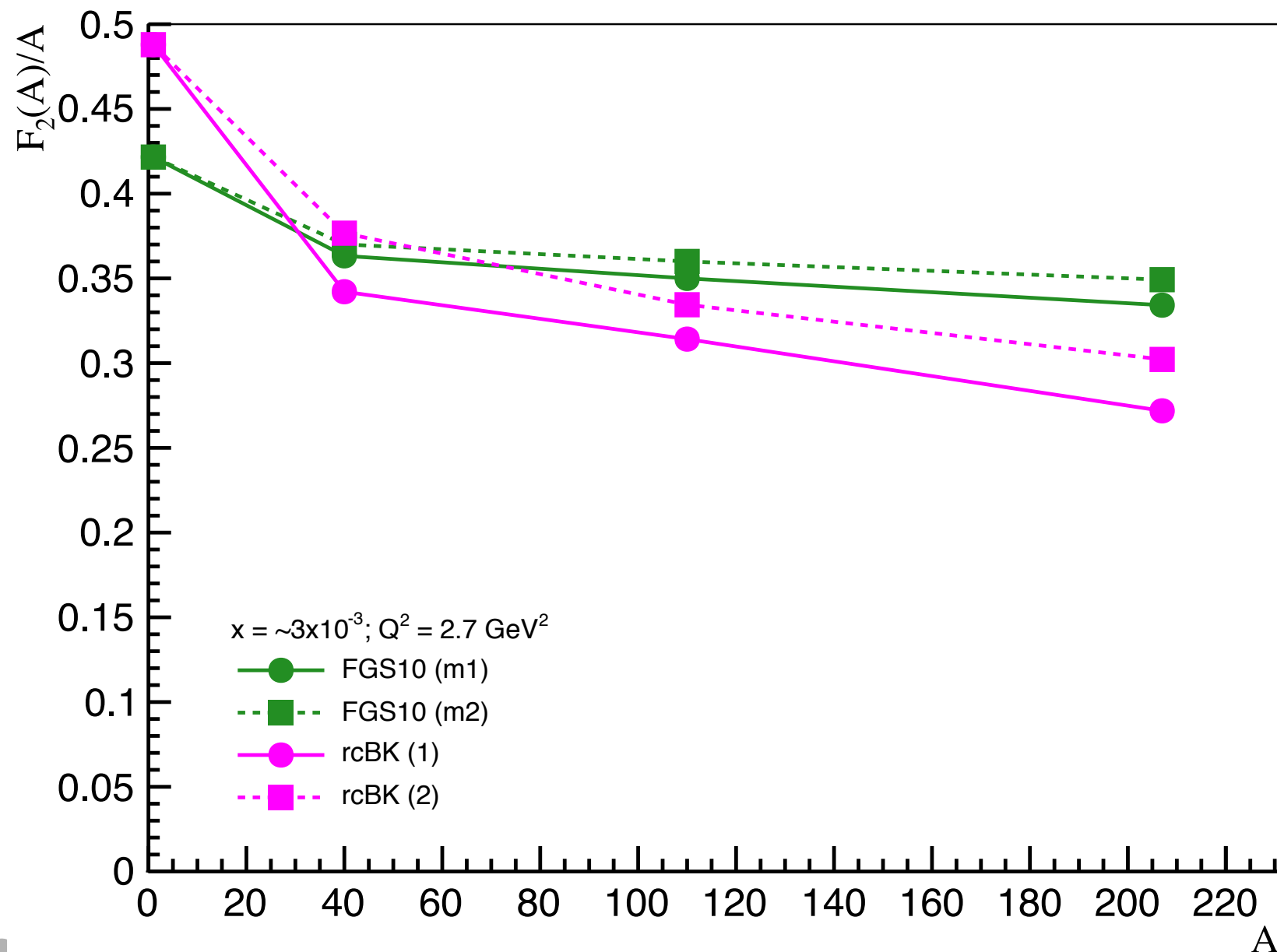
Shadowing models

- IPSat/bCGC
 - ➔ Not fit to most recent data
- rcBK
 - ➔ Fit to most recent data, describes data very well, most theoretically sound saturation model. Implementing running-coupling effects addresses higher-order effects



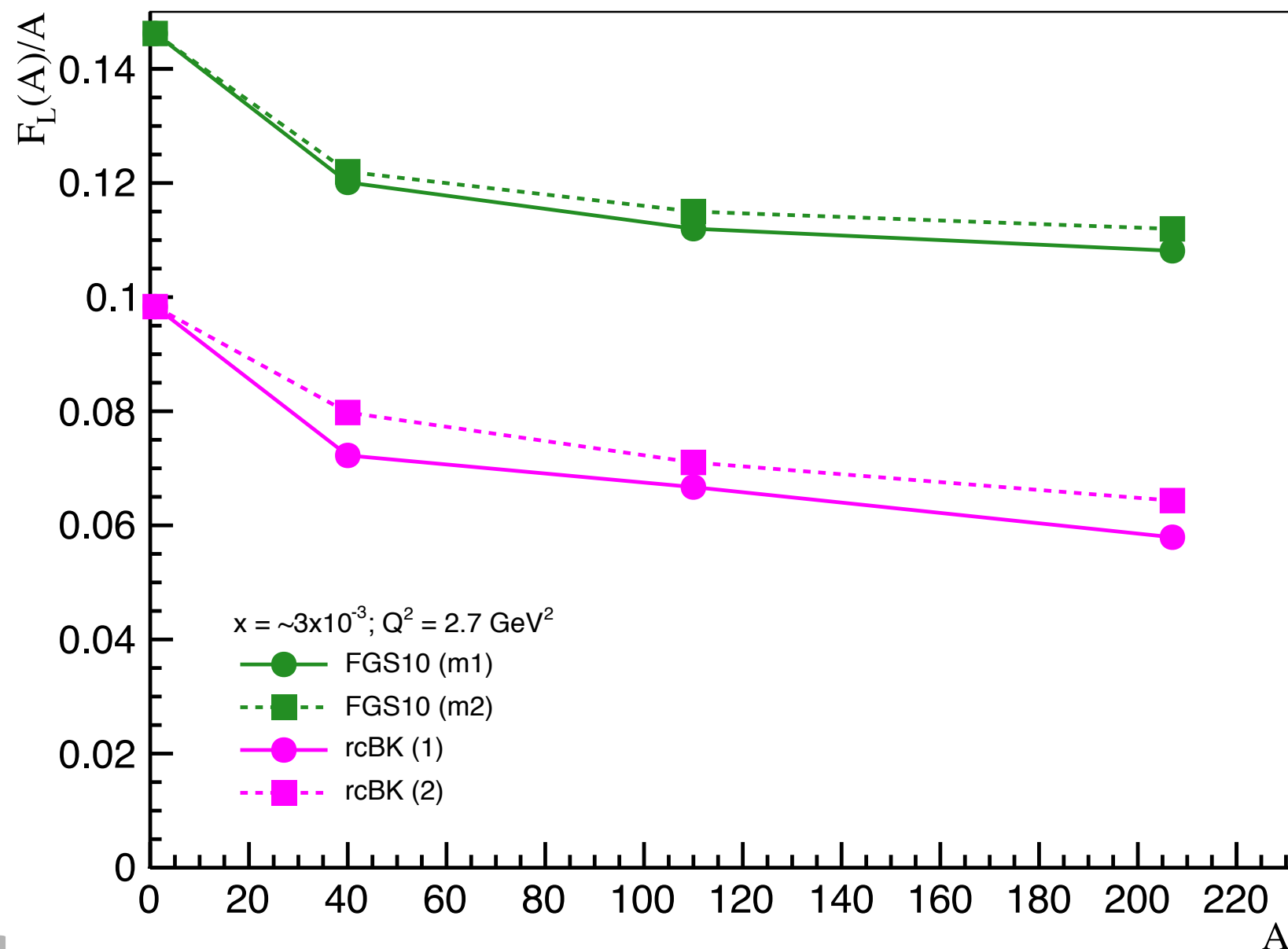
How to represent F_L and F_2 in the White paper?

- Idea - linear and non-linear effects should have different dependences on A



How to represent F_L and F_2 in the White paper?

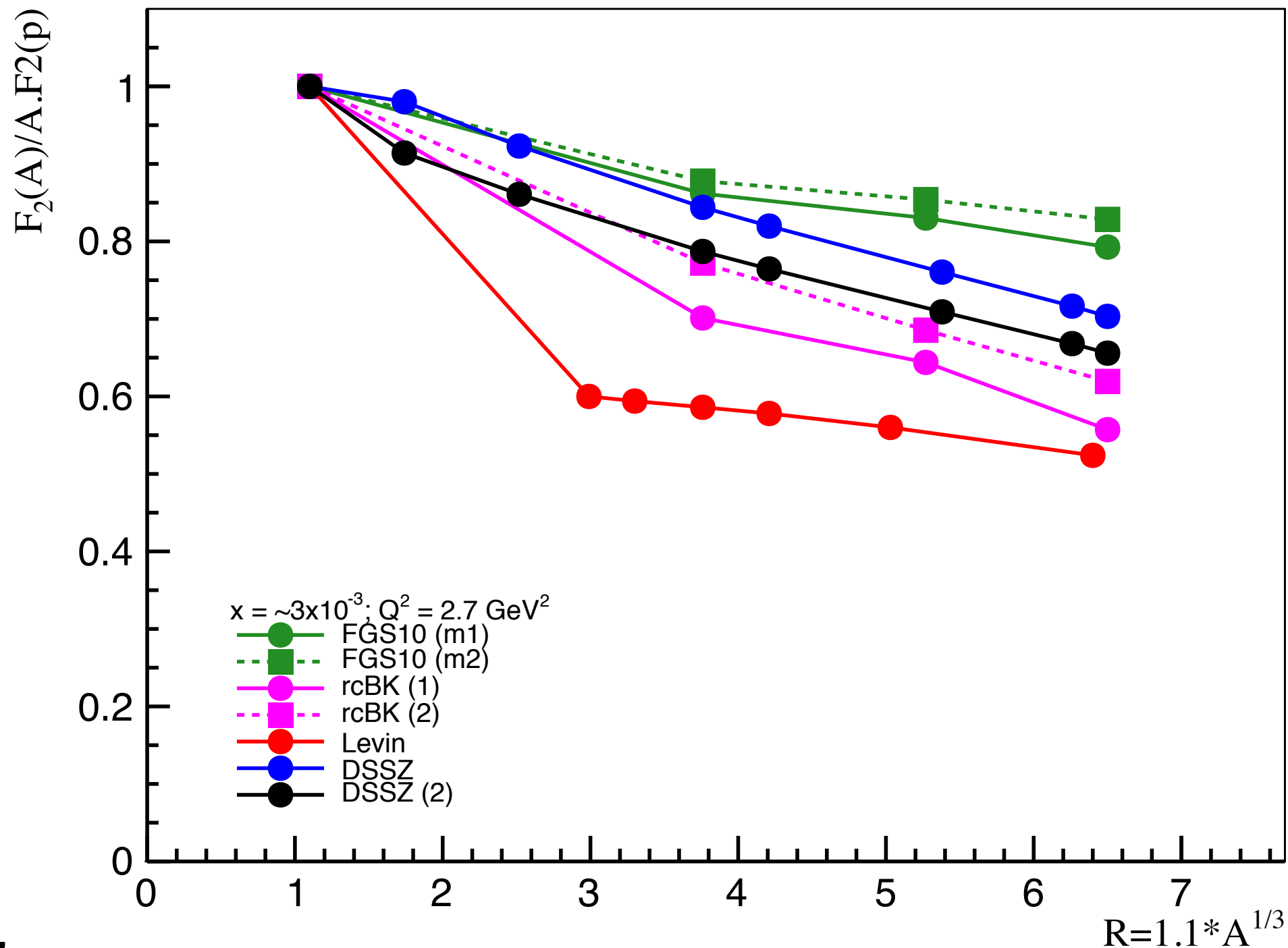
- Idea - linear and non-linear effects should have different dependences on A



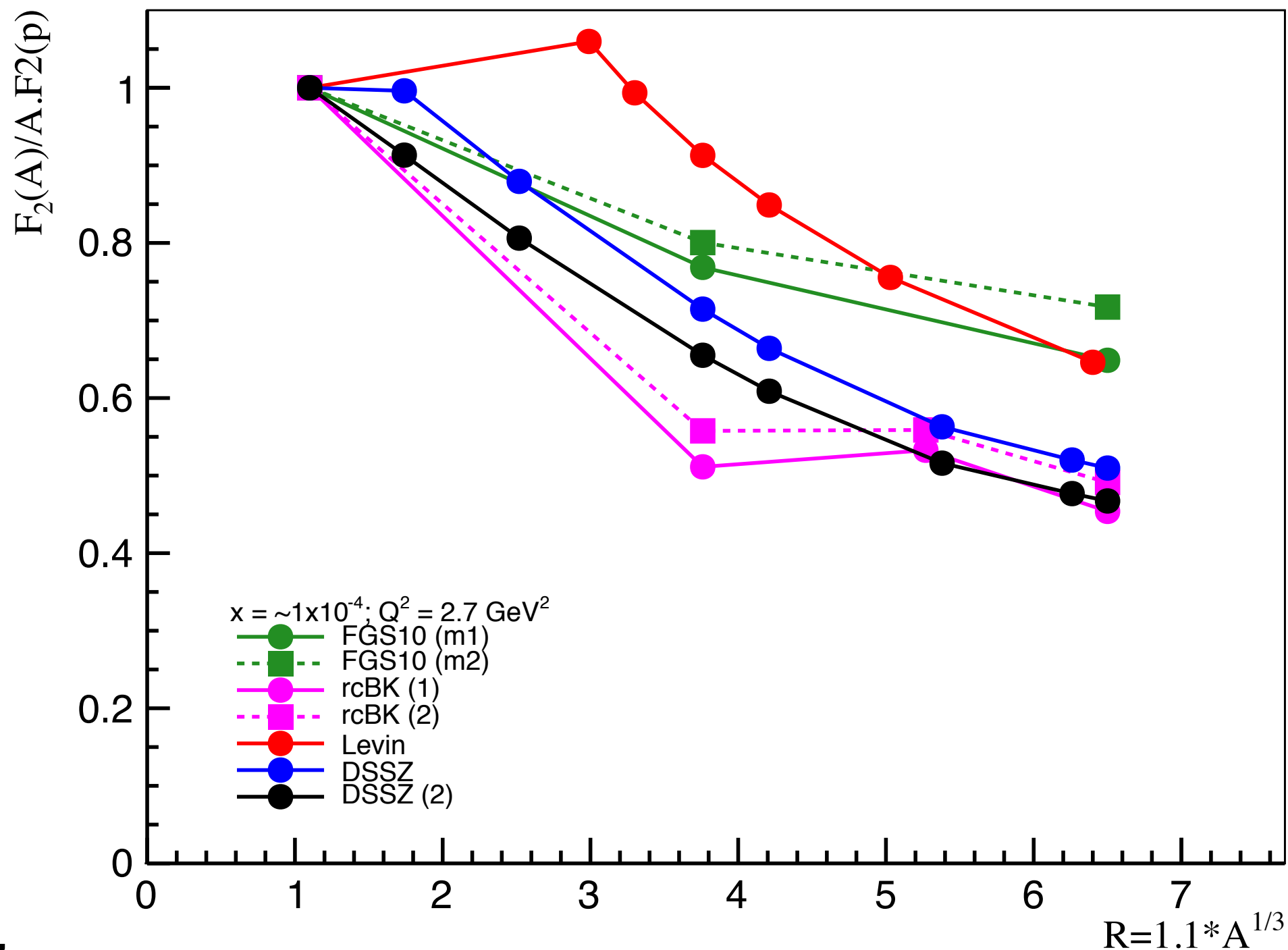
How to represent F_L and F_2 in the White paper?

- FGS model is so far off in the proton, can't use this. Not ideal in any case to represent non-saturation effects.
- Use DSSZ (NLO pQCD calculation)
 - Uses MSTW for the proton PDFs and then performs an analysis on:
 - DIS of charged leptons on nuclei
 - Drell-Yan di-lepton production
 - neutrino-nucleus scattering
 - inclusive pion production in d+A collisions

DSSZ vs rcBK



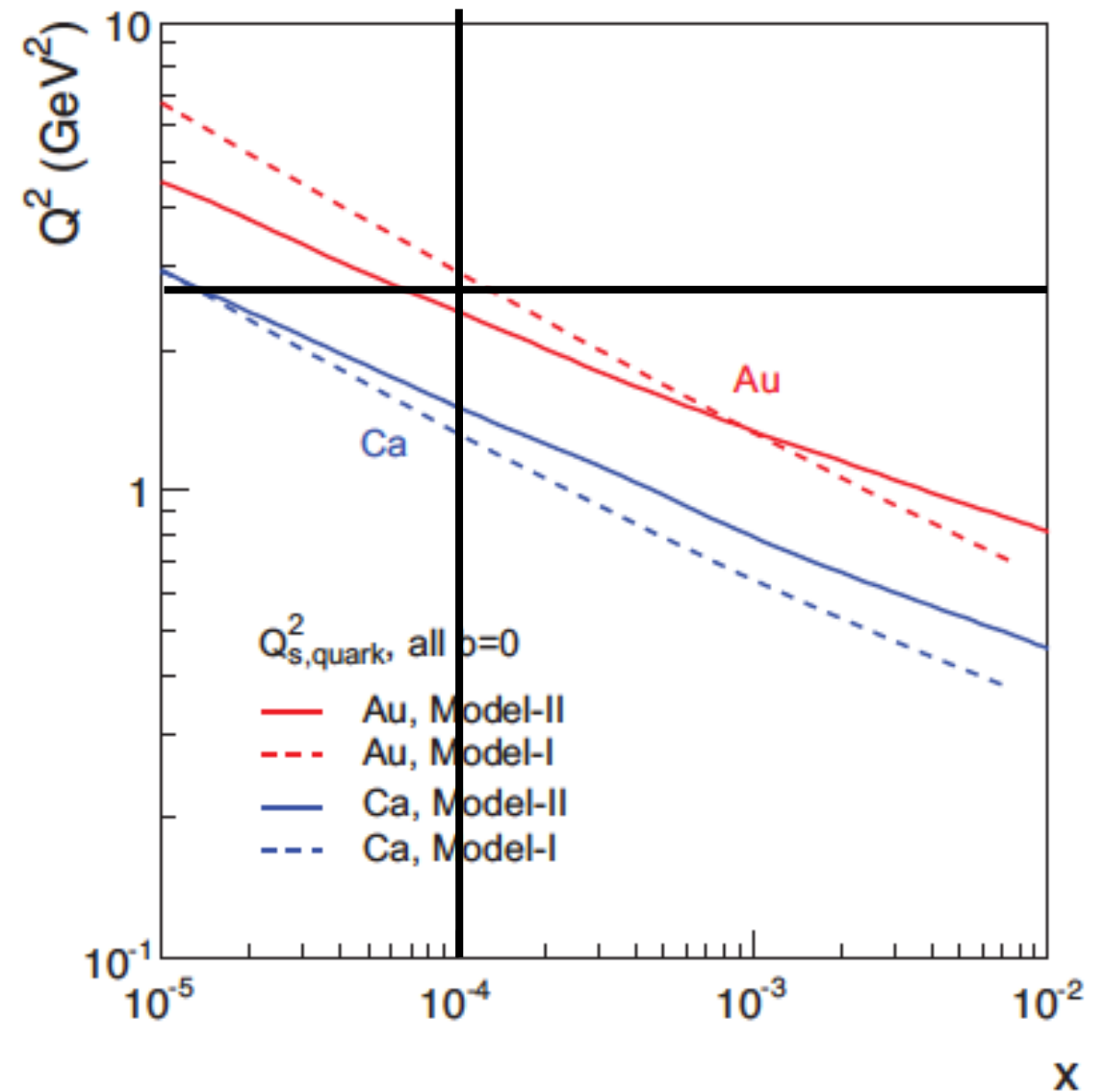
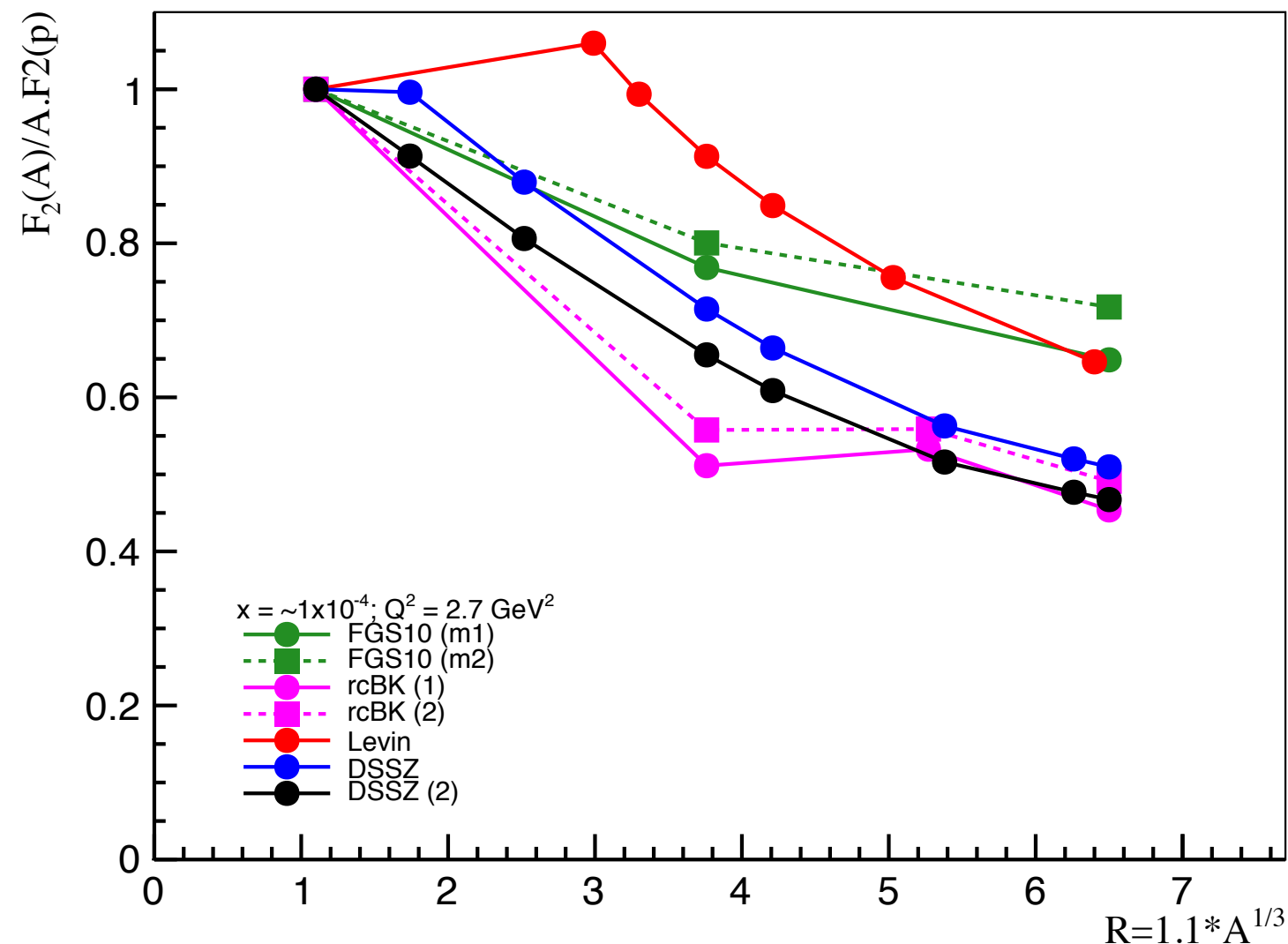
DSSZ vs rcBK



Why so little difference between DSSZ and rcBK?

- Are we still just too high in Q^2 to see anything?

→ I have $Q^2 = 0.5, 0.85, 1.20, 2.0$ from rcBK...



What's left to do?

- Look at lower Q^2
- Make plots for F_L - is that where the difference lies?

